Justification of Caesarean Section for Fetal Distress

Pages with reference to book, From 250 To 252

Rakhshan Shaheen Najmi (Department of Obstetrics and Gynaecology, Sir Ganga Ram Hospital and Fatima Jinnah Medical College, Lahore.)

Abstract

A study was done from May 1995 to February 1996 to evaluate the justification of caesareans for fetal distress by examining the circumstances leading to operative delivery for compromised fetus. Of the 1096 caesareans, 179 (16.33%) were for fetal distress. One hundred and seven (59.78%) were nulliparas and 127 (71%) came with the clinical features of fetal hypoxia. In 142 (79%) parturients at the time of c-section, cervical dilatation varied from 0-3 cm and in 144 (80%) the presenting part remained unengaged. The method most commonly employed to diagnose fetal distress was the external cardiotocography, used in 141 (79%) patients either alone or in combination with other options. Predictivity value of the parameters used to identify the fetuses at jeopardy was found to be more sensitive when used in combination. Neonatal outcome related poorly with the preoperative diagnosis if only one parameter was used. Poorest neonatal outcome was observed in the presence of thick particulate meconiurn. Great care should be exercised by the obstetricians while making a decision for caesarean for fetal distress so as to avoid unnecessary procedures and neonatal complications (JPMA 47:250,1997).

Introduction

The rising caesarean birth rate is a worldwide problem and has been introduced widely in most of the developing countries including Pakistan. Fetal distress is one of the four major indications for c-section, others being dystocia, previous caesarean and breech presentation[1]. A goal which is continually pursued during labour is to detect early signs of fetal compromise and to intervene immediately to avoid adverse neonatal outcomes. But identification of fetus at risk of hypoxia is not always easy. The methods most commonly used include auscultation of fetal heart, detectionofmecomum and electronic fetal heart monitoring if facilities are available. Neither electronic FHR monitoring nor auscultation has proved effective in predicting the degree of fetal hypoxia in the intrauterine life or the neonatal outcome. Diagnosis of fetal jeopardy based on CTG alone has led to an increase in c-section rate[2]. Rise inc-sectionfrequency has been associated withadrop in the perinatal mortality rate but it is not solely due to increasing caesarean rate. Organized and improved antenatal care, diagnosis of fetal anomalies and selective termination, better intrapartum fetal surveillance and advanced paediatnc care have contributed a lot to improve perinatal outcome. In our parturients the prevalence of fetal distress is very high. Due to inherent shortcomings of obstetric services and lack of adequate intrapartum monitoring, majority of cases present with well established signs of fetal hypoxia at teaching institutions. Availability of electronic FHR. monitoring and heavy reliance on it has led to increased the frequency of section due to fetal distress. All these factors contributed to unacceptably high percentage of sections being done for fetal jeopardy in our setup which should be looked into.

Patients and Methods

This prospective study was done in Unit 1 of the Department of Obstetrics and Gynaecology of Sir Ganga Ram Hospital, affiliated with Fatima Jinnah Medical College, Lahore between March, 1995 to Februaiy, 1996 to determine the frequency and indications of caesarean sections done for fetal distress.

Diagnosis of fetal distress was based on parameters like history of sluggish or absent fetal movements, FHR abnormalities detected by fetoscope or sonicade, presence of mecomum discovered on vaginal examination, CTG readings (FHR <120 or >160 beats per minute, late or variable decelerations and loss of variability) and sonographic findings (decreased or absent liquor, placental separation and cord presentation). In cases where diagnosis was based on abnonnal CTG patterns, two tracings were obtained to confirm fetal jeopardy. Operative findings and fetal outcomes of the selected cases were recorded. Data source for this study included medical files, records of labour room, operation theater and maternity wards. Information about the neonates admitted to the nursery was gathered from the relevant case files.

Results

Of 1096 caesaxeans 179 (16%) were done due to fetal jeopardy. One hundred and seven (60%) were nulliparous, panty of 63 (35%) ranged between 14 and 9 were para 5 or above.One hundred and thirty-two (73.74%) of these were unbooked. in 127 (7 1%) parturients there were signs of fetal compromise while in 72 (4 1%) patients labour was either induced or augmented. In 142 (79%) patients cervical dilatationvariedfrom0-3 cmandin 144 (80%) presenting part was non-engaged, it was either free floating or fixed at brim when decision of section was made (Table I).

Table I. Distribution of cases in relation to two cardinal parameters of Bishop Score.

Cervical dilatation	No.	(%)	Station of presenting part	No.	(%)
Closed	19	(11)	Free floating	76	(42)
1-3 cm	123	(69)	Fixed at brim*	68	(38)
4-6 cm	26	(14)	At minus 3	24	(13)
7-9 cm	7	(4)	At minus 2	6	(3)
Fully			At minus 1	2	(1)
Dilated	4	(2)	At zero	3	(2)

*Although unengaged, but cannot be moved freely by abdominal manipulation.

Fourpatients had sectionwith fully dilated cervix because presentingpart was at minus 2 or above, 3 were pnmigravidas and the last one was a 6th gravida. Five had caesareans with presenting part at minus 1 or zero station and cervical dilatation ranging between 5-8 cm, all were primiparas.

Table II. Modes of diagnosis of fetal distress.

			No.	(%)
I. Using one parameter			81	(45)
1. Meconium		18		
2. FHR abnormalities		61		
a. <120	17			
b. >160	13			
c. Decelerations	24			
d. Loss of variability	7			
3. Ultrasound		2		
II. Using two parameters			86	(48)
1. FM↓ and meconium*		8		
2. FM↓ and abnormal** FHR patterns		14		
3. Meconium and FHR abnormalities		47		
4. USG and FM↓		4		
5. USG and meconium		3		
6. USG and abnormal FHR patterns		10		
III. Using three parameters			12	(7)
1. FM↓, Meconium and abnormal FHR patterns		4		
2. Abnormal FHR patterns, USG and meconium		5		
3. FM↓, USG and meconium		3		

Fetal movement*

** Abnormal FHR patterns included FHR < 120 or >160 beats per minute or decelerations or loss of variability or any combinationof these patterns.

In Table II modes of diagnosis of fetal distress are given. In 98 (55%) patients diagnosis was based on two or three criteria. The parameter most commonly used to diagnose fetal compromise was abnormal FI-IR pattern picked up during external cardiotocography. In 141 (79%) cases, diagnosis was based onFHR abnormalities, in6 lit was the sole criterion, in 71 in combination with any one of the other

parameters and in 9 alongwith two other criteria. Of these 141 FHR abnormalities, the most common were late or variable deceleratios found in 77(55%) patients. Sonographic fmdings used to reinforce the diagnosis of fetal jeopardy included biophysical profile.
In 145 (81%) patients operative findings did support the clinical diagnosis ofjeopardized fetus but in 4 (19%) cases no evidence of fetal distress was found during surgeiy and most of these had the diagnosis based on CTG readings. The most common operative finding was the presence of meconium detected in 87 (49%) patients, followed by decreased orabsent liquor in 47 (26%), loops of cord around fetal neck in 9 and marked placental separation in 2 cases. In 56 (31%) cases presence of meconium was the only finding observed during section, in 20 patients it was seen with decreased or absent liquor and in 11 other features like loops of cord around fetal neck and placenta praevia were discovered alongwith meconium. Poorest neonatal outcome was found in those cases who had only paste like meconium without any liquor. Patients who had the operative finding of scanty or absent liquor came with history of leaking membranes or post-term pregnancy or had the clinical diagnosis of fetal growth retardation. Three important causes of fetal jeopardy identified were hypertensive disorders of pregnancy in 58 (32%) patients, prolonged labour in 47 (26%) and scanty or absent liquor in 31 (17%) resulting fromvarious conditions. In 83 (46%) neonates apgar score was less than 5, after 5 minutes of birth. Of the 83,51 (61.46%) remained admitted in intensive care nursery for 1-12 days. There were 5 neonatal deaths, in4 cases compromised fetal condition was diagnosed using two or three parameters and in one case section was decided due to the presence of paste like meconium. Fetal outcome related poorly with the clinical diagnosis, if only one parameter was used as compared to two or three indicators. Apgar score was found to be less than 5, after 5 minutes of delivery in 21(26%) newborns, out of those, 81 who had the diagnosis of fetal distress based on single parameter, in 52 (60.47%), out of those 86, in whom diagnosis was made by using 2 criteria and in 10(83.33%) of the 12 cases diagnosed to have fetal hypoxia with the help of three criteria.

Discussion

About 16% of caesareans were done for fetal distress. This figure was found to be 15.54% during 1988-1989 in another study3 from the same Unit. A study[4] from Sri Lanka revealed that 20% of caesareans were carried out due to compromised fetal status. A study[5] from France showed that compromised fetus was the cause of 25% of sections . In this study, 74% cases were unbooked and 71% came with jeopardized fetus. According to a Nigerian study[6], 10% of sections were done due to fetal heart rate irregularities in booked patients as compared to 21% in unbooked cases. In the developing World due to inadequate and disorganized maternal health care system and traditional and cultural beliefs, the labouring women come to the hospitals only when some maternal orfetal complications have developed, with the implementation of proper antenatal surveillance system, the conditions leading to fetal jeopardy can be picked up at an earlier stage and dealt accordingly. This will decrease the incidence of fetal distress itself, hence the percentage of caesareans being done for it. A number of obstetrical and medical problems during pregnancy may subject the fetus to chronic distress, unless monitored carefully, these cases are more likely to develop hypoxia during labour, as labour itself is considered a process of repetitive hypoxic events. Very strict intrapartum fetal monitoring of such cases is required to decrease the risk of further fetal compromise. This is possible if such high risk cases are picked during antenatal screening and managed properly. About 60% of the cases were primigravidas, hence marking theirfuture obstetric course and making them vulnerable to all the complications associated with scarred uterus. In 40% of cases labour was either induced or augmented. The decision of induction of labour should be well justified because it may end up with the section being done for fetal compromise. Because of state of cervical dilatation and station of presenting part, in 80% of parturients alternative modes of delivery could not be considered.

In 79% of patients external cardiotocography was used either alone or in combination with other parameters. In 19% of cases during surgery no clue regarding compromised state of fetus was found and in most of these cases diagnosis was based on various deceleration patterns. About 46% of neonates had apgar score less than 5, afterfive minutes of birth and rest of the 54% had more than 5 and did not require any special resuscitative measures, thus reflecting the poor predictivity value of the parameters used. There is overwhelming evidence that electronic FHR monitoring has led to increased c-section rate. According to a study[7], there was lack of a direct relationship between cardiotocograph patterns and short and long term outcomes of the neonates. Diagnosis of fetal jeopardy based on various decelerations patterns is too often simplified, early, late and variable decelerations although provide some clues about in utero events but cannot defme exactly the extent of fetal damage. Markedly abnormal decelerations patterns were shown to be of little significance as far as fetal outcome was concerned[8]. Prognostic value of FHR changes is increased when several patterns are combined. Prompt intervention within 30 minutes of diagnosis of fetal distress based on FHR abnormalities did not improve the neonatal outcome[9]. Caesarean delivery itself can affect the FHR. Prolonged decelerations have been reported during abdominal wall scrubbing in 10% of the fetuses and during uterine incision in another 10% as a result of excessive uterine contractility[10]. In a study[11] auscultated abnormal FHR patterns were found to be non-specific because most of the babies were born in a good condition. In an another study[12] it was shown that incidence of c-section for fetal distress dropped from 23% to 17% during the two biennial periods studied by early detection of fetal jeopardy by antenatal monitoring and better intrapartum surveillance including fetal blood pH estimation. About 76% cases of fetal distress were attributed to hypertensive disorders of pregnancy, prolonged labour, premature rupture of membranes and postdatism. By checking and controlling the series of events leading to the development of fetal distress during pregnancy or labour, the percentage of section being done for it can be reduced effectively. This can be achieved by improving the quality of existing antenatal services and imparting essential training and education to the concerned personnel. Secondly diagnosis of fetal distress shouldbe made with great care and should not be based on a single parameter thus eliminating the risk of overdoing caesareans for jeopardized fetus. On the other hand we should improve our clinical skills and knowledge so that intervention for truly compromised fetuses must not be delayed in order to avoid neonatal moibidity and mortality.

References

1. Igiesias. S.,Burn, R. and Saunders, L.D. Reducing c-section rate Can. Med. Assoc. J., 1991;145:1459-1460.
2. Spencer, J,A.D. Clinical overview of cardiotocography. Br. 3. Obstet. Gynae., 1993,100:4-7.
3. Najmi, R.S. and Bano, F. A comparison between emergency and elective caesareans Specialist, 1995;11 :277-282.
4. Sivasuriya, M and Sriskanthan, R. C-section. Aust, N.Z.J. Obstet. Gynaccol., 1988;28:96-98.
5. Peter, J.,Martaillae A., Roynaytte, D. et at. Lesindications de fa cesarienc. Rev. Fr. Gynaecol. Obstd., 1982;77:175-182.
6. Obed, J.Y. Surgical intervention in booked and unbooked cases. J. Obstet. Gynaecol.. 1995;15:15-18.
7. Symonds. EM. Litigation and CTG. Br. 1. Obstet. Gynaecol., 1993;100:8-9,
8. Picquard, F. and Hsiung, R. The validity of FHR monitoring during labour. 3. Obstet. Gynaecol.. 1988,72:746-747.
9. Dunphy, B.C.. Keegan,M.L., Waffarrn, D. et al. C-section for fetal distress. J. Obstet. Gynaecol., 1991 ;11:241-244.
10. Petnkovsky, B.. Cohen, M.. Fastman, D. et at. Electronic FHR monitoring during c-section. tnt. 3. Obstet. Gynaecol., 1988;26:203-205.

11. Shy, K.K.. Luthy, D.A., Bunnett, P.C. et at. Electronic FHR monitoring as compared to periodic auscultation N. Engi. 3. Med., 1990;322:588-591,
12. Rizvi, J.H. and Chaudhri, SR. Changing patterns of c-section. Aust. N.Z.J. Obstet. Gynaecol., 1988;28:263-266.